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Abstract of the Disclosure

[0048] A method for the cleaning of wafers typically during a chemical mechanical polishing (CMP) process. The method includes polishing a material layer on a wafer in sequential polishing steps, rinsing the wafer using a novel surfactant composition solution after at least one of the polishing steps and rinsing of the wafer using deionized water, respectively. The surfactant composition solution imparts a generally hydrophilic character to a hydrophobic material layer such as a high-k dielectric layer on the wafer. Consequently, the layer is rendered amenable to cleaning by deionized water, thereby significantly enhancing the removal of particles from the layer and reducing the number of defects related to the CMP process.